REMARKS

Reconsideration of the present application is respectfully requested. Claims 1-22 previously presented for examination remain in the application. Claims 1, 7, 10 and 15-19 have been amended. No claims have been canceled and no new claims have been added.

The abstract of the disclosure is objected to because it is comprised of two paragraphs. The abstract has been amended as indicated. Applicant respectfully requests withdrawal of the objection.

Claims 15-18 stand objected to due to minor informalities. In particular, it is considered that claim 15 used inconsistent terminology to refer to the same elements. Applicant has amended claim 15 as indicated above to use consistent terminology. Withdrawal of the objection is respectfully requested.

Claims 1, 2, 10, 11, 19 and 20 stand rejected under 35 U.S.C. § 102(b) as being considered to be anticipated by U.S. Patent No. 6,057,538 to Clarke ("Clarke").

Claim 1 includes the limitations

> a plurality of photodetector elements disposed on a semiconductor substrate; and
>
> a compound light directing member including a plurality of light directing elements in a single layer, at least some of the light directing elements to individually direct light energy from one or more sources onto one or more of the photodetector elements, the compound light directing member being the primary mechanism to direct light energy onto the one or more of the photodetector elements,
>
> outputs of the photodetector elements being electrically coupled such that an image associated with one or more sources may be synthesized at output circuitry, the photodector elements and compound light directing member together providing a substantially planar artificial compound eye.

(Claim 1)(emphasis added)

Applicant respectfully submits that Clarke does not teach or suggest at least the claimed compound light directing member including a plurality of light directing elements in a single layer.

Clarke discloses an image sensor comprising an array of light responsive pixels and is particularly concerned with focusing of an image on to the array of pixels for a contact-type image sensor. (e.g. Clarke, col. 1, lines 6-10). In order to provide the focusing arrangement needed for contact-type image sensing (e.g. for document copying), multiple layers of lenses are provided. (see e.g. Figure 2).

In contrast, as set forth in claim 1, a single layer of light directing elements is provided.

For at least this reason, Clarke cannot be considered to teach the claimed elements of applicant's invention.

Independent claims 10, 15 and 19 include limitations similar to those argued above in reference to claim 1. Claims 2-6, claims 11-14, claims 16-18 and claims 20-22 depend from and further limit claims 1, 10, 15 and 19, respectively. Thus, for at least the same reasons, claims 2-6 and 10-22 should also be found to be patentably distinguished over the Clarke reference.

Claims 1, 3, 4, 10, 12, 15-17, 19 and 21 stand rejected under 35 U.S.C. § 102(b) as being considered to be anticipated by U.S. Patent No. 5,517,019 to Lopez ("Lopez").

Applicant respectfully submits that Lopez does not teach or sugg st at least the plurality of photodetector elements disposed on a semiconductor substrate as set forth in claim 1.

Lopez discloses an optical compound eye sensor with ommatidium sensors and related methods. According to Lopez, an optical compound eye sensor comprises a plurality of ommatidium sensors disposed in a fixed relationship to form a multifaceted sensing surface. Each of the ommatidium sensors has a conical body of refractive material situated longitudinally along a respective optic axis and has a lens face and an electro-optic element, such as an emitter or detector, situated at substantially opposing ends of the conical body along the respective optic axis. The lens face and the conical body direct light either to or from the electro-optic element. The lens faces of the ommatidium sensors collectively define the multifaceted surface for receiving light from the light source. (Lopez, Abstract).

In contrast, claim 1 sets forth elements including a plurality of photodetector elements disposed on a substrate. Lopez does not teach or suggest such an element. For at least this reason, claim 1 is patentably distinguished over Lopez.

Independent claims 10, 15, and 19 each include a similar limitation.

Claims 2-6, claims 11-14, claims 16-18 and claims 20-22 depend from and further limit claims 1, 10, 15 and 19, respectively, and thus, should also be found to be patentably distinguished over Lopez for at least the same reason.

Independent claim 7 sets forth a compound exposure determining member coupled to a semiconductor substrate. Lopez also does not teach or suggest this element and therefore, claim 7 should be found to be distinguished over Lopez for at least this reason.

Claims 8-9 depend from and further limit claim 7 and thus, should also be found to be distinguished over Lopez for at least this reason.

Claims 1, 5-10, 13-15, 18, 19 and 22 stand rejected under 35 U.S.C. § 102(b) as being considered to be anticipated by U.S. Patent No. 5,929,440 to Fisher ("Fisher").

Applicant respectfully submits that Fisher does not teach or suggest at least the photodectors of claim 1 having outputs electrically coupled to synthesize an image.

Fisher discloses an electromagnetic radiation responsive detector that includes an array of multi-layered cantilevers with each cantilever having at least a first layer for absorbing EMR signals and a second layer for reflecting light incident on the second layer. Each cantilever is formed to absorb EMR which is converted into heat and causes the cantilever to bend proportionately to the amount of EMR energy it absorbs. The amount of EMR absorbed by each cantilever of the array is optically read-out by illuminating the cantilevers of the array and sensing the light reflected from each cantilever. Notably, the optical read-out of the array eliminates the need for electric read-out circuitry and accessing wires to be formed on the array.

In contrast, claim 1 sets forth a plurality of photodetector elements disposed on a substrate that receive light energy from a compound light directing member, wherein the outputs of the photodetector elements are electrically coupled such that an image associated with one or more sources may be synthesized.

Because Fisher does not teach or suggest the claimed coupling of the outputs to synthesize an image, claim 1 is patentably distinguished over Fisher.

Independent claims 10, 15 and 19 include limitations similar to those argued above in reference to claim 1. Claims 2-6, claims 11-14, claims 16-18 and claims 20-22 depend from and further limit claims 1, 10, 15 and 19, respectively. Thus, for at least the same reasons, claims 2-6 and 10-22 should also be found to be patentably distinguished over the Fisher reference.

Claim 7 includes the limitations

> a compound exposure determining member coupled to a semiconductor substrate, the compound exposure determining member including a plurality of light scanning elements, each of the light scanning elements including an integrated photodetector; and
> micromachine control circuitry to control an orientation of at least some of the light scanning elements relative to the substrate to determine a direction from which light is received at the respective integrated photodetectors.

(Claim 7)(emphasis added)

Applicant respectfully submits that Fisher does not teach at least the micromachine control circuitry that controls an orientation of at least some of the light scanning elements.

As discussed above, Fisher discloses an EMR responsive detector. The cantilevers of Fisher absorb EMR which is converted to heat and causes the cantilevers to bend proportionately to the amount of EMR energy it absorbs.

In contrast, the micromachine control circuit of claim 7 actively controls the orientation of light scanning elements.

For at least this reason, claim 7 is patentably distinguished over the Fisher reference.

Claim 8 depends from and further limits claim 7 and thus, should also be found to be distinguished over the Fisher reference for at least the same reason.

Based on the foregoing, applicants respectfully submit that the applicable rejections and objections have been overcome and claims 1-22 are in condition for allowance. If the examiner disagrees or believes that further discussion will expedite prosecution of this case, the examiner is invited to telephone applicants' representative at the number indicated below.

If there are any charges, please charge Deposit Account No. 02-2666.

Respectfully submitted,

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Dated: December 31, 2003

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